

IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for Conservation

Revised and updated 2nd Edition Vol. I



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**Second Edition: Revised and Updated
Volume I**

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JHARKHAND

HI-NI



SATYA PRAKASH

Seven IBAs have been identified in Jharkhand including the famous Hazaribagh Wildlife Sanctuary

Jharkhand was carved out of Bihar on November 1, 2000. It accounts for 45% of former Bihar's geographical area, mainly the Chotanagpur plateau. It is one of the most important mineral-producing states of the country (Ministry of Environment and Forests 2001). The State is bound by Bihar in the north, West Bengal in the east, Madhya Pradesh in the west and Odisha in the south. Jharkhand, with a total area of 79,714 sq. km, has a population of 3.29 crores (Census 2011). The population consists of 28% tribals, 12% Scheduled Castes and 60% others. The population density of the State is 414 persons per sq. km. However, it varies from as low as 148 per sq. km. in Gumla district to as high as 1167 per sq. km in Dhanbad district.

Vegetation

According to the Forest Survey of India report 2001, Jharkhand ranks tenth among all the states and Union Territories of India in respect to the area under forest cover. The dense forest distributed in the northwest and the southeast of the State constitutes about 15%, the open forest areas evenly distributed in the north, central and southeastern parts of the State constitute about 13.6%, and the non-forested area is about 71.6%. The State, with

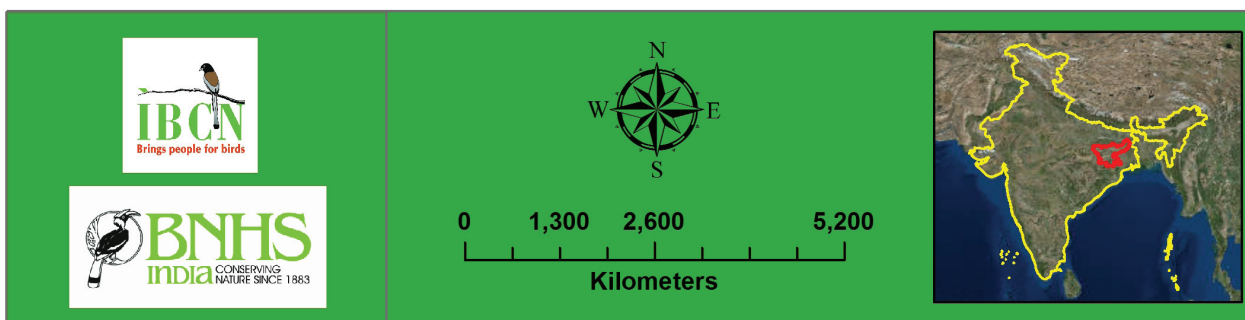
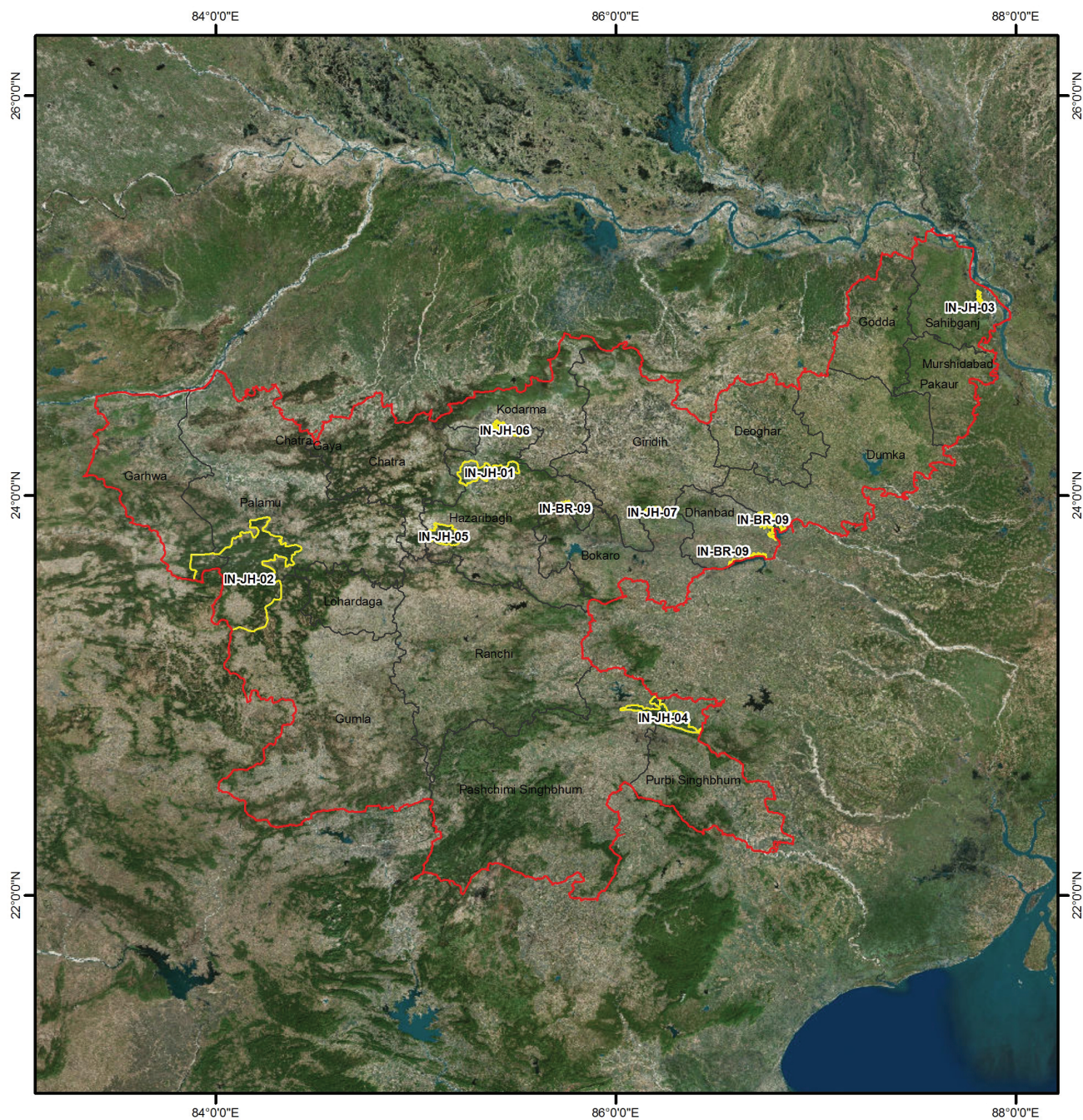
a geographical area of 79,714 km², constitutes 2.42% of the country's area. Of the total recorded forest area, Reserved Forests constitute 18.58%, Protected Forests 81.28%, and Unclassed Forests 0.14%. As per the State of the Forest Report of the Forest Survey of India, the forest cover in the State is 22,977 km² which is 28.82% of the State's geographical area. The total forest and tree cover put together, it constitutes about 32.48% of the geographical area of the State against the national average of 23.81% (Source <http://www.jharkhand.gov.in/about-forest-department>).

The main forest types are: (a) Peninsular Dry and Moist Sal Forests, (b) Hill Valley Swamp Forest, (c) Moist Sal Savannah, (d) Moist Mixed Deciduous Forest, (e) Riverine Forest, (f) Bamboo and Cane brakes (Ministry of Environment and Forests 1999).

IBAs AND PROTECTED AREAS

The protected areas of the State include the Betla (Palamau) National Park (23167 ha), which is the only National Park in the State and ten wildlife sanctuaries, namely Dalma Wildlife Sanctuary (19322 ha), Hazaribagh Wildlife Sanctuary (IBA site, 18625 ha), Koderma Wildlife

Important Bird Areas in Jharkhand



Sanctuary (17795 ha), Lawalong Wildlife Sanctuary (20700 ha), Mahauaduar Wildlife Sanctuary (6325 ha), Palamau Wildlife Sanctuary (IBA site, 79433 ha), Palkot Wildlife Sanctuary (18300 ha), Parasnath Wildlife Sanctuary (4933 ha), Topchanchi Wildlife Sanctuary (875 ha) and Udhuwa Lake Wildlife Sanctuary (IBA site, 565 ha). In 2004, only three IBAs were identified in Jharkhand: Hazaribagh Wildlife Sanctuary, Palamau National Park and Udhuwa Lake Bird Sanctuary, but since then four more sites have found to qualify the IBA criteria.

AVIFAUNA

Jharkhand is one of the least-studied states and the information on birds is meagre. A bird checklist of the State is not available. The only ornithological work (e.g. Jamal Ara 1966) was conducted nearly 50 years ago when Jharkhand was a part of Bihar. Later, Shahi (1982) published some articles on poaching crises which also dealt with areas which are now in Bihar. Later, in Palamau Tiger Reserve about 170 bird species were recorded by Sinha and Mukherjee (1995), including six globally Threatened species and 33 biome-restricted species. Although none of the globally

Threatened species have significant populations in this IBA, the forests, especially the core area of 21,300 ha, is good for birds of Dry Deciduous Forest (Biome 11). We have included this site specifically on the basis of biome-restricted assemblage criteria.

The Hazaribagh Wildlife Sanctuary is rich in avifauna although a systematic survey needs to be done here in order to know more about birds and their density and abundance. Ara (1966) published a preliminary list of 97 bird species. Since then, no further study has been conducted on birds in this IBA. The site has the typical Dry Deciduous Forest of central India. Based on the biome classification of BirdLife International (undated), it lies in the Indo-Malayan Tropical Dry Zone (Biome 11).

Udhuwa Lake Bird Sanctuary is situated in the northeastern part of the State and here too not much work has been done, but Choudhary *et al.* (1992) have identified 83 species of birds, including many forest species. The list includes such rarities as Nordmann's Greenshank or Spotted Greenshank *Tringa guttifer*. This however, needs to be reconfirmed. A. Mishra (*pers. comm.* 2001) has sighted the Near Threatened Black-necked Stork *Ephippiorhynchus*



SATYA PRAKASH

In Jharkhand that was carved out of Bihar in November 2000, a total of 22,977 km² is under forest cover. This constitute nearly 32 per cent of the geographical area of the state. Many streams and rivers that provide drinking water and irrigation originate from forests

asiaticus. At present, Udhuwa does not qualify for A4 (iii) criteria but once it is properly protected, this IBA has a great potential to become an important waterfowl refuge (A. Mishra *pers. comm.* 2001).

A paper published after two decades reports 107 species of birds in Udhuwa (Prakash *et al.* 2012). This includes five globally Threatened species. Another survey conducted in 2013 reports four more species: Black-necked Stork *Ephippiorhynchus asiaticus*, Osprey *Pandion haliaetus* (Schedule I species), Northern Shoveller *Spatula clypeata* and Greylag Goose *Anser anser* (Satya Prakash *per. comm.*). In 2014 four more wetland species were reported which include Near Threatened Ferruginous Duck *Aythya nyroca* and the common Fulvous Whistling-duck *Dendrocygna bicolor* (Prakash 2014a).

Asian Waterfowl Count (AWC) 2015 was conducted in twenty five water bodies of Jharkhand with the support

of Forest and Environment Department, Government of Jharkhand. A total of 78 species of wetland birds were recorded during the census. Eleven Threatened and Near Threatened bird species were recorded at different places in Jharkhand during the census. Among these Oriental Darter *Anhinga melanogaster*, Black-headed Ibis *Threskiornis melanocephalus*, Ferruginous Duck *Aythya nyroca*, Eurasian Curlew *Numenius arquata* and River Tern *Sterna aurantia* were Near Threatened (NT); Asian Woollyneck earlier known as White-necked Stork *Ciconia episcopus* and Lesser Adjutant *Leptoptilos javanicus* were Vulnerable (VU) and Black-bellied Tern *Sterna acuticauda* was Endangered (EN) as per IUCN Red list of 2014. The other three species, Western Marsh Harrier *Circus aeruginosus*, Osprey *Pandion haliaetus* and Fulvous/Large Whistling- duck *Dendrocygna bicolor* were listed as Schedule I as per The Wildlife (Protection) Act, 1972. During the census two green-collar tagged Bar-headed

IBAs of Jharkhand

Site code	Name of the Site	IBA Criteria
IN-JH-01	Hazaribagh Wildlife Sanctuary	A1
IN-JH-02	Palamau Tiger Reserve	A1,A3
IN-JH-03	Udhuwa Lake Wildlife Sanctuary	A1
IN-JH-04	Dalma Wildlife Sanctuary	A1, A3
IN-JH-05	North Karanpura Valley	A1, A3
IN-JH-06	Tilaiya Dam	A1, A3
IN-JH-07	Topchanchi Wildlife Sanctuary	A1, A3

LIST OF THREATENED BIRDS WITH IBA SITE CODES

CRITICALLY ENDANGERED		
White-rumped Vulture	<i>Gyps bengalensis</i>	IN-JH-01, 02, 03, 06
Long-billed Vulture	<i>Gyps indicus</i>	IN-JH-01, 05, 06
Red-headed vulture	<i>Sarcogyps calvus</i>	IN-JH-02
ENDANGERED		
Egyptian Vulture	<i>Neophron percnopterus</i>	IN-JH-01, 02, 04, 05
VULNERABLE		
Asian Woollyneck	<i>Ciconia episcopus</i>	IN-JH-02, 03, 04, 07
Lesser Adjutant	<i>Leptoptilos javanicus</i>	IN-JH-01, 03
Pallas's Fish-Eagle	<i>Haliaeetus leucoryphus</i>	IN-JH-03
Greater Spotted Eagle	<i>Clanga clanga</i>	IN-JH-02
Sarus Crane	<i>Grus antigone</i>	IN-JH-01
Green Munia	<i>Amandava formosa</i>	IN-JH-02, 03
NEAR THREATENED		
Oriental Darter	<i>Anhinga melanogaster</i>	IN-JH-03
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	IN-JH-02, 03
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	IN-JH-02, 03, 04, 06, 07
Ferruginous Duck	<i>Aythya nyroca</i>	IN-JH-03, 06
Himalayan Griffon	<i>Gyps himalayensis</i>	IN-JH-01, 05
Red-headed Falcon	<i>Falco chicquera</i>	IN-JH-01
Malabar Pied Hornbill	<i>Anthraceroceros coronatus</i>	IN-JH-02
Alexandrine Parakeet	<i>Psittacula eupatria</i>	IN-JH-01, 02, 03, 04, 05, 06, 07,
River Lapwing	<i>Vanellus duvaucelii</i>	IN-JH-02
Eurasian Curlew	<i>Numenius arquata</i>	IN-JH-02, 03



SATYA PRAKASH

Jharkhand state has many old and well protected sanctuaries that have great potential to attract birdwatchers.
Guest house (above) in the famous Hazaribagh Wildlife Sanctuary

Goose *Anser indicus* were seen, one each in Konar Dam, Hazaribagh and Hatia Dam, Ranchi. The Konar Dam bird was tagged at the northwest bay of the Terkhiin tsagaan lake in Arkhangai province of Central Mongolia. This confirms that the migratory Bar-headed Geese arrive in Jharkhand from Central Mongolia (Prakash 2014b, Prakash *et al.* 2015).

One yellow collar tagged Mongolian Bar-headed Goose was also seen in the Chharwa Dam (Eco-sensitive Zone) on the periphery of the Hazaribagh Wildlife Sanctuary (Prakash 2014b).

DISTRIBUTION OF THREATENED SPECIES

In some of the IBAs, Lesser Adjutant has been recorded, especially from the Udhuwa Wildlife Sanctuary (Arvind Mishra *pers. comm.* 2003). The Pallas's Fish-eagle is another important bird which is reported regularly from this IBA (Arvind Mishra *pers. comm.* 2003). The Green Munia was recorded from Palamau National Park in 1878 (one specimen is preserved in the Natural History Museum, London). There is no recent record of this bird from this region except the sale of 2,000 Green Munia *Amandava formosa* at Ranchi in the 1990s, which does not imply

a large population in this region as trapping activities are focused on Odisha and Madhya Pradesh and birds must have been brought from these states. Single report of Critically Endangered Red-headed Vulture *Aegypius calvus* had been seen in Kutku Range in April 2014 and Near Threatened River Lapwing can be easily seen in the River Auranga and Koel in Palamu Tiger Reserve (Satya Prakash *pers. comm.* 2015). The Greater Spotted Eagle *Clanga clanga* and the Lesser Kestrel *Falco naumanni* are migratory birds and can be seen in and around Udhuwa Lake and Palamau National Park but not in significant numbers (Arvind Mishra *pers. comm.* 2003).

Hazaribagh district including Hazaribagh Wildlife Sanctuary (IBA) and North Karnpura Valley is perhaps the only place in Jharkhand where a substantial number of the four vulture species *viz.* Critically Endangered White-rumped Vulture *Gyps bengalensis* and Long-billed Vulture *Gyps indicus* are found. The other two are Endangered Egyptian Vulture *Neophron percnopterus* and occasionally seen Himalayan Griffon *Gyps himalayensis*. *Gyps bengalensis* and *Gyps indicus* are successfully nesting and breeding in the area and efforts are on for their in-

situ conservation (Prakash 2009, Prakash *et al.* 2013). A breeding ground of Lesser Adjutant has been reported recently from Bokaro district, adjoining border of Hazaribagh district (Dwivedi *et al.* 2013). One injured Lesser Adjutant *Leptoptilos javanicus* was reported from the periphery of Hazaribagh Wildlife Sanctuary (Satya Prakash *per. comm.* 2014).

The other potential areas are Satpahad Hills, Saranda Forest, Parasnath Hill Range and other wetlands sites which are not properly studied. More intensive surveys are required to know the density and population of birds.

Biomes

The major portions of the State is covered by Biome 11 (Indo-Malayan Tropical Dry Zone). This large biome has Dry Deciduous forest, Dry Evergreen forest, Thorn forest, Semi-desert scrub, Wooded Grasslands, Secondary Grasslands, arable land and abandoned farmland as key habitats (BirdLife International, undated). In the north of the State, a small portion lies under Biome 12 (Indo-Gangetic Plains), with wetlands, moist/marshy grasslands and scrub on marshy ground as the key habitats. Fifty-nine species are listed under Biome 11, all common and widely distributed. The Biome 12 has 13 species, with some globally Threatened species. None of the globally Threatened species of Biome 12 are reported from Jharkhand.

THREATS AND CONSERVATION ISSUES

Jharkhand is a densely populated State with almost 80% rural population. Most of the people live in villages and about 28% of the population is tribal. Large mineral and industrial undertakings are scattered in the tribal belt. Although these industries have created some employment opportunities, most of the tribals are marginalized on their own land. Their marginalization puts further pressure on the existing forests. The key threats to the IBAs and the birds in the State are:

- Extraction Industry (Mining)
- Dams
- Tourism
- Overgrazing by livestock
- Lack of administration
- Extensive poaching of birds
- Agricultural intensification and expansion
- Excessive fishing
- Population pressure leading to illegal felling



SATYA PRAKASH / Neo Human Foundation

Although greatly depleted during the last 20 years, White-rumped and Long-billed Vultures are sometimes seen on cattle carcasses. Neo Human Foundation has done commendable work for the protection of vultures

of trees

The vital forest corridors of Hazaribagh Wildlife Sanctuary and North Karanpura Valley are threatened by the existing and proposed mining ventures. The environmental and social impacts of coal mining in general, and their impact on wildlife corridors in particular, have been highlighted for many years by various groups in this region. One of the important areas in Hazaribagh, likely to be affected by the large-scale opening of coal mining, is the North Karanpura Valley. A thermal power station and a dam also threaten the area. Due to constant lobbying by locals in the Hazaribagh region, the World Bank commissioned a study to look at the adverse impacts on wildlife habitat and corridors caused by open cast mining (Vagholikar *in press*). Parts of the area have already been mined extensively, destroying vital wildlife corridors.

The railway line between Koderma-Hazaribagh-Barkakana that was to pass through the Hazaribagh Wildlife Sanctuary has been realigned for environmental reasons. The railway line has now become functional (till date only Hazaribagh to Koderma line is functional) and it skirts the forests of the Sanctuary, bisecting the corridor between North Karanpura Valley and Hazaribagh Wildlife Sanctuary. This has threatened the corridor between the habitat which was an important passage for wild animals.

Human-made forest fires result in the degradation of natural habitat and hamper regeneration. Illicit felling of Khair *Acacia catachu* and Teak *Tectona grandis*, and poaching of animals by armed groups have been reported in the Palamau Tiger Reserve. There are 191 villages situated in and around the Reserve. The projected human population

in these villages is 1,87,795 of which 96,199 people live within the Reserve boundary. About 90,000 cattle from these villages graze in the Reserve. Consequently, wild animals are affected by foot and mouth disease and anthrax. Armed extremists are also present in the Reserve, causing a severe law and order problem (Jain 2001). For these reasons, the protection of the forests and wildlife, wildlife studies and the promotion of tourism have become difficult to implement. Coal mining has been proposed in the area about 1.6 km from the Reserve boundary. The Reserve is also threatened by the Mandal dam of the North Koel multipurpose hydroelectric project as it will submerge very good forest and also bring labourers during the long-construction period who will have direct impact on the remaining forests for their fuel wood needs.

In the Udhuwa Lake Bird Sanctuary, large scale poaching of birds and illegal fishing have been the biggest challenges for the Forest Department ever since it was declared a Bird Sanctuary under the Wildlife Protection Act 1972. The surrounding areas face a severe threat from the large scale settlement of people, apparently Bangladeshis, by the lake, adding to the burden on the natural resources. Also, the area surrounding both the lakes (Pataura and Berhale) is used for agriculture, and in the summer, when the water level of Berhale Lake recedes, the exposed land is used for agriculture.

The Dalma Wildlife Sanctuary is under stress from excessive tourism causing serious threat to the birds of this Sanctuary. Pilgrims visiting Dalma Top Mandir, uncontrolled tourists visiting Dimna lake, use of high intensity sound and uncontrolled litter disposal are threats to the Sanctuary. Sporadic reports in newspapers show the birds visiting Dimna Lake have declined in the recent past.

A religious tribal hunt “Bishu Shikar” or “Sendra” is organised in the Dalma Wildlife Sanctuary every summer (April/May) for a day and tribals from different parts of Jharkhand, West Bengal and Odisha swarm to the Sanctuary for hunting wildlife. The pace is set for Bishu Shikar from the Sarhul festival that occurs from first to third week of February every year. After Sarhul, the tribals hunt for animals, usually every Monday, until the main Bishu-Shikar. The tribals set fire at different places for driving the wild animals. They climb the hill of Dalma and hunt for large mammals and birds such as deer, Wild Boar, Red Junglefowl, Peafowl etc or whatever comes in their way during climbing the hill. The animal including birds run and fly haphazardly to save their life. On one

hand they directly hunt and on the other hand they drastically disturb the habitat of the Dalma forest during Bishu-Shikar.

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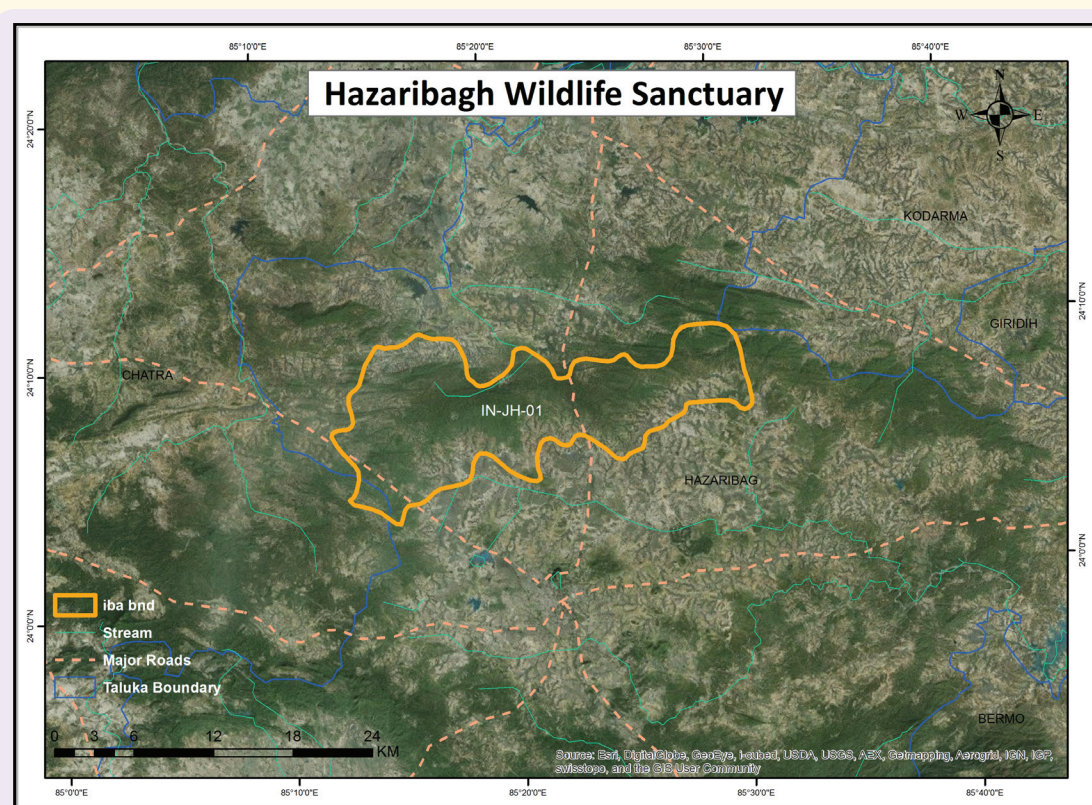
HAZARIBAGH WILDLIFE SANCTUARY

IN-JH-01

IBA Site Code	: IN-JH-01	Rainfall	: 1,234.5 mm
State	: Jharkhand	Temperature	: 4 °C to 42 °C
District	: Hazaribagh	Biogeographic Zone	: Deccan Peninsula
Coordinates	: 24° 1' to 24° 12' N, 85° 13' to 85° 32' E	Habitats	: Tropical Dry Deciduous Forest, Dry Peninsular Sal Forest, Northern Dry Mixed Deciduous Forest, Dry Bamboo Brake
Ownership	: State		
Area	: 18,625 ha		
Altitude	: 604 msl		

IBA CRITERIA : A1 (Threatened species), A3 Biome 11: Indo-Malayan Tropical Dry Zone

PROTECTION STATUS : Wildlife Sanctuary, established in May 1976. Declared a National Park.



GENERAL DESCRIPTION

Hazaribagh Wildlife Sanctuary (HWS) occupies an area of 186.25 sq. km (18,625 ha). Before Independence, the entire sanctuary area was a private hunting reserve forest belonging to the Raja of Ramgarh, that subsequently became government property after the abolition of the Zamindari system. The terrain encompasses high plateaus, hills, and valleys. Hazaribagh Wildlife Sanctuary was one of the first protected areas of the erstwhile Bihar State, and came to be in the new state of Jharkhand, following the division of Bihar in 2001.

The sanctuary is surrounded by a number of densely populated tribal villages with their cultivation and

settlements, which exert increasingly undesirable biotic pressure, rendering the area susceptible to degradation. An 8 km highway passes through the wildlife sanctuary, severing the habitat into two.

According to the classification of Champion & Seth (1968), the forests of the sanctuary fall under the category Northern Tropical Dry Deciduous Forest, which is further subdivided into Dry Peninsular Sal, Northern Dry Mixed Deciduous Forest, and Dry Bamboo Brake.

AVIFAUNA

The sanctuary is rich in avifauna. Ara (1966) published a preliminary list of 97 birds species. After more than four

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>
ENDANGERED	
Egyptian Vulture	<i>Neophron percnopterus</i>
VULNERABLE	
Asian Woolly-neck	<i>Ciconia episcopus</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Sarus Crane	<i>Grus antigone</i>
NEAR THREATENED	
Himalayan Griffon	<i>Gyps himalayensis</i>
Red-headed Falcon	<i>Falco chicquera</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
BIOME 11: INDO-MALAYAN TROPICAL DRY ZONE	
Black Ibis	<i>Pseudibis papillosa</i>
White-eyed Buzzard	<i>Butastur teesa</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Indian Vulture	<i>Gyps indicus</i>
Red-headed Falcon	<i>Falco chicquera</i>
Jungle Bush-quail	<i>Perdica asiatica</i>
Indian Peafowl	<i>Pavo cristatus</i>
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>
Yellow-footed Green-pigeon	<i>Treron phoenicoptera</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Dusky Horned-owl	<i>Bubo coromandus</i>
Common Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrceros birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Common Woodshrike	<i>Tephrodornis pondicerianus</i>
Black-headed Cuckooshrike	<i>Coracina melanoptera</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
Marshall's Iora	<i>Aegithina nigrolutea</i>
White-browed Fantail	<i>Rhipidura aureola</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Brown Rock-chat	<i>Cercomela fusca</i>
Ashy Prinia	<i>Prinia socialis</i>
Jungle Prinia	<i>Prinia sylvatica</i>
Jungle Babbler	<i>Turdoides striata</i>
Rufous-bellied Babbler	<i>Dumetia hypertyra</i>
Rufous-fronted Prinia	<i>Prinia buehanani</i>
White-bellied Drongo	<i>Dicrurus caerulescens</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Chestnut-tailed Starling	<i>Sturnia malabarica</i>
Bank Myna	<i>Acridotheres ginginianus</i>

decades, survey was conducted between 2009 and 2014, which revealed the presence of 183 species of birds in the sanctuary. These do not include 14 species, including one Vulnerable species Sarus Crane *Grus antigone*, reported by Ara. Prakash *et al.* (*in press*) have listed 197 species of birds, including six globally Threatened and 32 biome-restricted species.

Based on the biome classification of BirdLife International, Hazaribagh WLS lies in the Indo-Malayan Tropical Dry Zone (Biome 11).

Four species of vultures species: Critically Endangered White-rumped Vulture *Gyps bengalensis*, Indian Vulture *Gyps indicus*, Endangered Egyptian Vulture *Neophron percnopterus*, and Himalayan Vulture *Gyps himalayensis* are found in Hazaribagh Wildlife Sanctuary. Himalayan Vulture is regularly sighted during the winter. *Gyps bengalensis* is successfully nesting and breeding in the area and action is being taken for their *in situ* conservation (Prakash 2009; Prakash *et al.* 2013).

Recently, a tagged Mongolian Bar-headed Goose was seen in Chharwa Dam, in the identified Eco-sensitive Zone on the periphery of HWS (Prakash 2014). On another occasion, one injured Lesser Adjutant *Leptoptilos javanicus* was reported from the periphery of HWS (Satya Prakash, *pers. comm.* 2014). Recently, breeding of Lesser Adjutant has been reported from Bokaro district, adjacent to Hazaribagh district (Dwivedi *et al.* 2013).

OTHER KEY FAUNA

Major mammalian fauna includes Tiger *Panthera tigris*, Leopard *P. pardus*, Sambar *Cervus unicolor*, Spotted Deer *Axis axis*, Striped Hyaena *Hyaena hyaena*, Sloth Bear *Melursus ursinus*, Golden Jackal *Canis aureus*, Wild Dog or Dhole *Cuon alpinus*, Palm Civet *Paradoxurus hermaphroditus*, and Pangolin *Manis crassicaudata*. A recent study revealed 25 species of reptiles, including 16 species of snakes, 8 species of lizards and Indian Flapshell Turtle *Lissemys punctata* (Prakash 2012).

LAND USE

- Nature conservation and research
- Tourism and recreation
- Water management
- Watershed management
- Transportation (widening of road which will bisect the sanctuary)

THREATS AND CONSERVATION ISSUES

- Mining and quarrying
- Agricultural intensification and expansion
- Tourism
- Livestock/Grazing
- Poaching
- Infrastructure development (widening of existing road)
- Illegal felling of trees
- Forest fire

Hazaribagh WLS is rich in biodiversity, but it is facing serious multidimensional threats. The sanctuary is particularly under serious threat of habitat fragmentation. The proposed Hazaribagh-Koderma railway line, when commissioned, will pass through the outskirts of HWS



Hazaribagh is one of the earliest sanctuaries of erstwhile Bihar but now it is in Jharkhand state. It has old-growth Sal forest

and cut off the forest from North Karanpura Valley. The forests of Hazaribagh WLS and North Karanpura Valley in Jharkhand are vital wildlife corridors connecting the forests of Palamau in the west to those of Ranchi in the south, and the Konar watershed in the east. A project is underway to widen the existing lane of NH-33 from Barhi to Hazaribagh (8 km road passing through HWS). This proposed widening of the highway threatens to bisect the protected area and to obstruct the movement of wildlife. Eventually, there will be increase in road mortality of wildlife, particularly smaller mammals which move across the road in search of water, shelter, and food. In the last three years (2011–2013), a part of the sanctuary is being visited seasonally by a few dispersed elephants. As a result, numerous reports of human-elephant conflict have emerged from the villages Mutia Tola, Gadi, Fufundi, Marpa, Tilir, Sayal, and Lotwa in HWS.

Increased tourism has become a cause of disturbance to the wildlife in the sanctuary. Livestock grazing within the sanctuary is a serious problem, which in the last few years has increased due to lack of control. Along with grazing, lopping, felling of young trees, mining/quarrying, and removal of bark for preparation of Ayurvedic medicines and rope making, all go on unabated. Immediate conservation measures need to be undertaken, with community participation, to reverse habitat degradation.

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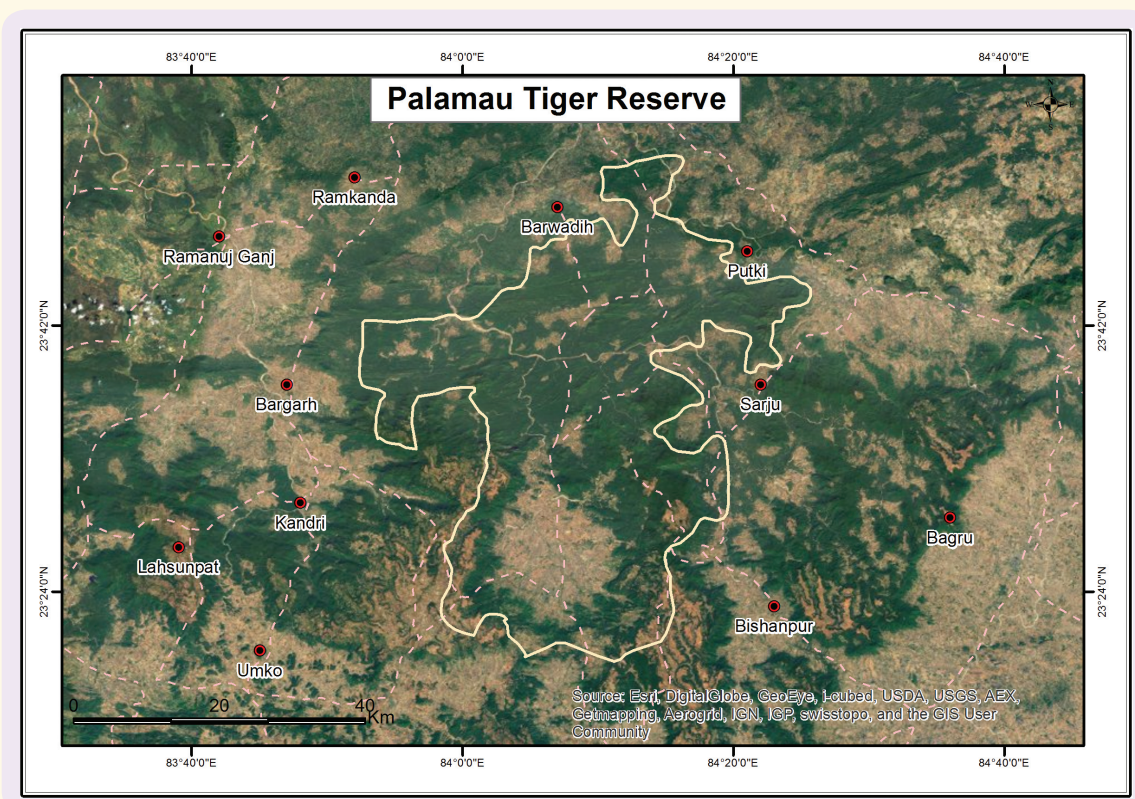
PALAMAU TIGER RESERVE

IN-JH-02

IBA Site Code	: IN-JH-02	Altitude	: 300–1,140 m
State	: Jharkhand	Rainfall	: 1,036 mm to 1200 mm
District	: Palamau	Temperature	: 4 °C to 54 °C
Coordinates	: 23° 39' 36" N; 84° 09' 35" E	Biogeographic Zone	: Deccan Peninsula
Ownership	: Forest & Environment Department, Government of Jharkhand.	Habitats	: Tropical Bamboo Brakes, Tropical Dry Deciduous, Tropical Moist Deciduous, Mixed Deciduous, Tropical Grassland, Riverine Vegetation
Area	: 1306.78 sq. km		

IBA CRITERIA : A1 (Threatened species), A3 (Biome 11: Indo-Malayan Tropical Dry Zone)

PROTECTION STATUS : Tiger Reserve, established in June 1974.



GENERAL DESCRIPTION

Palamau Tiger Reserve (PTR) lies in the western part of the Chhota Nagpur plateau. It was one of the first nine tiger reserves launched in 1974. The forest stretches from the edge of the Netarhat Hill Range in the south to the river Auranga in the north and from the Latehar-Sarju road in the east to the Madhya Pradesh border in the west.

The forests of Palamau are the catchment of three main perennial rivers, North Koyal, Auranga, and Burha. The Reserve has predominantly Sal *Shorea robusta* forests in and around Netarhat hills, i.e. the highest peak of PTR. Most of the area of PTR is covered by either Dry Deciduous Forest and Mixed Deciduous Forest. The Reserve has Sal

forests on the lower slopes and Dry Deciduous forests on the upper slopes. Bamboo and scattered open grassy patches are common. Almost pure patches of *Bel Aegle marmelos* are the unique vegetation type found mostly in the northern part of the Reserve. The Reserve also has perennial waterfalls like Lodh fall, Sugga bandh, seasonal waterfalls like Mirchaiya fall, and two hot springs at Baresand and Berwadih (Jain 2001). According to the last census report in (2014), there are 17 tigers in PTR.

Palamau Tiger Reserve has almost one-third of the total elephant population of Jharkhand. The males are mostly without tusks i.e., they are *makhnas*. PTR provides excellent elephant habitat. During extreme summer, these elephants

keep moving in search of perennial water sources like Burha river in Baresand Range of PTR (A.K. Mishra *pers. comm.*).

AVIFAUNA

Although the avifauna is largely unstudied, previous records show that c. 170 bird species were recorded (Sinha & Mukherjee 1995), including six globally threatened species and 33 biome restricted species.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
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VULNERABLE

Asian Woolly-neck	<i>Ciconia episcopus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Green Munia	<i>Amandava formosa</i>

NEAR THREATENED

Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Eurasian Curlew	<i>Numenius arquata</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Malabar Pied Hornbill	<i>Anthracoceros coronatus</i>

BIOME-11: INDO-MALAYAN TROPICAL DRY ZONE

Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Red-naped Ibis	<i>Pseudibis papillosa</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Red-headed Vulture	<i>Aegypius calvus</i>
White-eyed Buzzard	<i>Butastur teesa</i>
Jungle Bush-Quail	<i>Perdica asiatica</i>
Common Peafowl	<i>Pavo cristatus</i>
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>
Yellow-footed Green-pigeon	<i>Treron phoenicoptera</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Sirkeer Malkoha	<i>Phaenicophaeus leschenaultii</i>
Mottled Wood-owl	<i>Strix ocellata</i>
Common Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrocus birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
White-naped Woodpecker	<i>Chrysocolaptes festivus</i>
Indian Bushlark	<i>Mirafra erythroptera</i>
Ashy-crowned Sparrow-lark	<i>Eremopterix grisea</i>
Rufous-winged Lark	<i>Mirafra assamica</i>
Black-headed Cuckooshrike	<i>Coracina melanoptera</i>
Ashy Woodswallow	<i>Artamus fuscus</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Rufous-bellied Babbler	<i>Dumetia hyperythra</i>
Large Grey Babbler	<i>Turdoides malcolmi</i>
Jungle Babbler	<i>Turdoides striata</i>
Ashy Prinia	<i>Prinia socialis</i>
Jungle Prinia	<i>Prinia sylvatica</i>
Green Munia	<i>Amandava formosa</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Bank Myna	<i>Acridotheres ginginianus</i>
White-bellied Drongo	<i>Dicrurus caerulescens</i>

In a recent survey conducted in 2013 and other opportunistic surveys conducted during the last four years (2010–2014), 37 previously unrecorded species have been added to the checklist. Thus the checklist of birds of PTR now has 207 species, including 12 globally Threatened and Near Threatened species and 34 species belonging to Biome 11: Indo-Malayan Tropical Dry Zone. Among these, the Near Threatened River Lapwing *Vanellus duvaucelii* was recorded for the first time in the riverbed of Auranga (Prakash *et al. in prep.*).

Gyps spp. have not been reported for a long time, but recently the Endangered Egyptian Vulture *Neophron percnopterus* has been sighted in Palamau in the Koyal river bed (Mishra & Prakash 2013). The Critically Endangered Red-headed Vulture *Aegypius calvus* was recently seen at Mathagari, PTR in 2014 (S.H.E. Kazmi *pers. comm.*).

Although none of the globally threatened species have significant populations in Palamau Tiger Reserve, the Buffer area of 73,089 ha in Betla is especially good for birds of dry deciduous forests (Biome 11). We have included this site mainly on the basis of biome-restricted assemblage criteria. More studies are required to find out the density and abundance of various species of birds.

OTHER KEY FAUNA

Other than the Tiger *Panthera tigris*, mammals commonly sighted are Leopard *Panthera pardus*, Asian Elephant *Elephas maximus*, Gaur *Bos frontalis*, Sambar *Cervus unicolor*, Chital *Axis axis*, Barking Deer *Muntiacus muntjak*, Nilgai *Boselaphus tragocamelus*, Common Palm Civet *Paradoxurus hermaphroditus*, Leopard Cat *Felis bengalensis*, Grey Mongoose *Herpestes edwardsi*, Wild Boar *Sus scrofa*, and Indian Giant squirrel *Ratufa indica*.

LAND USE

- Grazing land for livestock
- Agriculture by local villagers
- Infrastructure development including housing, transport, Panchayat Bhavan, Anganbari (creches), CRPF Camp.

THREATS AND CONSERVATION ISSUES

- Proposal for construction of big dams, e.g. Mandal Dam
- Extraction industry (mining and quarrying)
- Poaching and hunting by tribals
- Illegal felling of trees
- Livestock grazing
- Forest fires
- Law and order problem (insurgency)
- Invasive species (weeds)
- Man-animal conflict
- Power transmission lines



SATYA PRAKASH

Palamau was one of the first nine tiger reserves launched in 1974. Before becoming a protected area it was famous as a hunting reserve during the British days. It is a fine representative of Biome-11 (Indo-Malayan tropical Dry zone), with 34 out of 59 Biome-11 species reported till now

- Railway line: approx 20 km passes through PTR, leading to accidental death of elephants, other herbivores
- State highway divides PTR into halves and is a source of accidents to mammals, reptiles, birds

The area is under stress from excessive grazing and man-made fires which result in degradation of natural habitat and hamper regeneration. Illicit felling of Khair *Acacia catechuoides* and Teak *Tectona grandis*, and poaching of animals by armed groups have been reported. There are 191 villages situated in and around Palamau Tiger Reserve. The projected human population in these villages is 187,795, of which 96,199 people live within the Reserve boundary. The population is dominated by scheduled tribes (Oraon, Cheros, Mundas, Birja, Korwa, Kherwar, Asur Birhor, etc). About 90,000 cattle from these villages graze in the Reserve. Wild animals are contracting foot-and-mouth disease and anthrax from the cattle. Armed extremists are also present in the Reserve, causing a severe law and order problem (Jain 2001). Due to this reason, protection of the forest and its wildlife, study of wildlife and promotion of tourism have become difficult.

Coal mining has been proposed about 1.6 km from the Reserve boundary. The Reserve is also threatened by the Kutku Dam of the North Koel multipurpose hydroelectric project.

KEY CONTRIBUTORS

Arvind Mishra, D.S. Srivastava, Satya Prakash, Anil Kumar Mishra, Raju Kasambe, Mridula Sapru, and M. Raziuddin.

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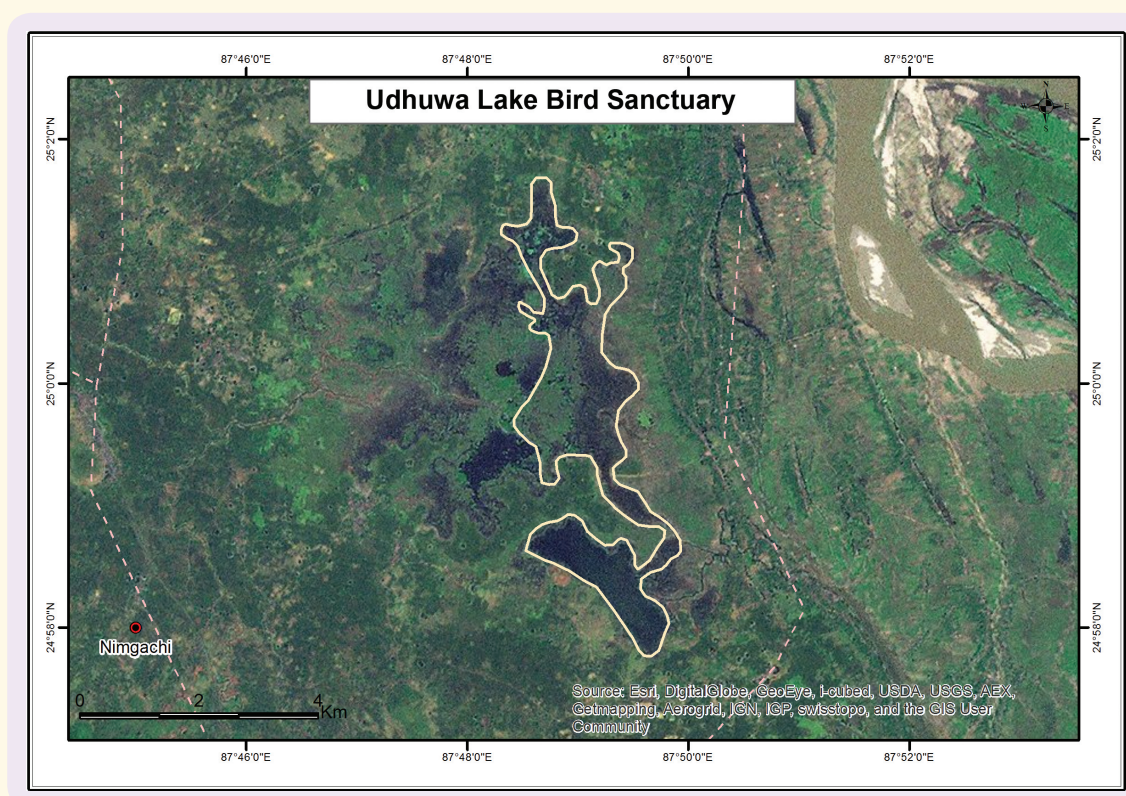
UDHUWA LAKE BIRD SANCTUARY

IN-JH-03

IBA Site Code	: IN-JH-03	Area	: 565 ha
State	: Jharkhand	Altitude	: 24 msl
District	: Sahibganj	Rainfall	: 1,363 mm
Coordinates	: 24° 59' 37" N, 87° 49' 21" E	Temperature	: 10 °C to 40 °C
Ownership	: State	Biogeographic Zone	: Gangetic Plain
		Habitats	: Freshwater Swamp (Reservoir)

IBA CRITERIA : A1 (Threatened species), A3 (Biome 11: Indo-Malayan Tropical Dry Zone)

PROTECTION STATUS : Wildlife Sanctuary, established in 1991.



GENERAL DESCRIPTION

Udhwa Lake Bird Sanctuary (ULBS) is situated 11 km southeast of Rajmahal in the Sahibganj district of Jharkhand state. This sanctuary is constituted by two waterbodies, namely Pataura (155 ha) and Berhale (410 ha). Pataura is a comparatively clean waterbody and the average depth is c. 2 m whereas Berhale is very shallow, with average depth c. 70 cm. Berhale is largely choked with aquatic vegetation, mainly *Eichhornia crassipes*, *Salvinia cuculata*, *Marsilea minuta*, *Ipomoea aquatica*, and *Hydrilla verticillata*, with small pockets of clear water.

Both these waterbodies are interconnected by a water channel and the whole sanctuary is connected with River Ganga near Taltala Ghat at Farraka by Udhwa Nullah, which is a 25 km stretch. Pataura is surrounded by hillocks

on one side, while on the other side, the Forest Department has done some plantation (on the hillocks).

These two lakes support a large number of aquatic and semi-aquatic fauna and provide sufficient food for both resident and migratory birds. Since ULBS is surrounded on all sides by agricultural fields and more than two dozen villages, there is high anthropogenic pressure on it (Prakash *et al.* 2012). Udhwa Lake Bird Sanctuary is rich in fish diversity. These support a number of piscivorous bird species.

AVIFAUNA

Two decades ago, Choudhary *et al.* (1992) identified 83 species of birds, including many forest species. The list includes such rarities as Nordmann's Greenshank or Spotted Greenshank *Tringa guttifer* that still remains unconfirmed.

Recently, Prakash *et al.* (2012) studied the avian diversity of this sanctuary and reported the occurrence of 107 species of birds. This includes five globally Threatened species. Another survey conducted in 2013 reports four more species, including the Near Threatened Black-necked Stork *Ephippiorhynchus asiaticus*. Osprey *Pandion haliaetus* (Schedule I species under WPA 1972) and Greylag Goose *Anser anser* have also been reported (Satya Prakash, *pers. comm.* 2014). Prakash (2014) reported four more wetland species including the Near Threatened Ferruginous Duck *Aythya nyroca*, besides Fulvous Whistling-duck *Dendrocygna bicolor* which was seen in large numbers.

OTHER KEY FAUNA

There are not many large mammals of conservation concern. Previous work shows the presence of about 22 fish species, most of them of commercial value (Choudhary *et al.* 1992). Recent surveys conducted during 2009–2014 revealed the presence of 42 species of fishes, including *Oreochromis mossambicus*, *Ompok pabda*, *Wallago attu*, and *Ailia coila*, which are listed as Near Threatened in the IUCN Red List (Satya Prakash, *pers. comm.*).

LAND USE

- Agriculture
- Fishing
- Irrigation
- Bridge (over the canal between Pataura and Berhale Lake)

CRITICALLY ENDANGERED

White-rumped Vulture *Gyps bengalensis*

VULNERABLE

Asian Woollyneck *Ciconia episcopus*
 Lesser Adjutant *Leptoptilos javanicus*
 Pallas's Fish-eagle *Haliaeetus leucoryphus*
 Green Munia (Avadavat) *Amandava formosa*

NEAR THREATENED

Oriental Darter *Anhinga melanogaster*
 Black-necked Stork *Ephippiorhynchus asiaticus*
 Black-headed Ibis *Threskiornis melanocephalus*
 Ferruginous Duck *Aythya nyroca*
 Eurasian Curlew *Numenius arquata*
 Alexandrine Parakeet *Psittacula eupatria*

BIOME 11: INDO-MALAYAN TROPICAL DRY ZONE

Red-naped Ibis *Pseudibis papillosa*
 Brown-headed Barbet *Megalaima zeylanica*
 Black-rumped Flameback *Dinopium benghalense*
 White-browed Fantail *Rhipidura aureola*
 Jungle Babbler *Turdoides striata*
 Bank Myna *Acridotheres ginginianus*

THREATS AND CONSERVATION ISSUES

- Land dispute among farmers
- Intensive agriculture
- Disrupted water regulation
- Encroachment (illegal settlements and agriculture)
- Illegal fishing and poaching
- Indiscriminate use of agricultural equipment (use of water pump leading to oil spill)
- Trespassing
- Tree felling in surrounding areas
- Use of fertilizers and pesticides
- Eutrophication
- Siltation
- Overall anthropogenic pressure

The non-settlement of the compensation disputes of Rayati lands acquired from farmers for the sanctuary is one of the main reasons for illegal agricultural practices, fishing, and poaching of native and migratory birds. Poaching of birds and illegal fishing are the biggest challenges for the Forest Department ever since the declaration of the bird sanctuary under the Indian Wildlife (Protection) Act.

Another major problem is the vast encroachment along the margin of the perennial lake by the heavy influx of suspected illegal Bangladeshi immigrants who have settled beside the lake. Some groups have vested interests in providing security to these immigrants (Mishra *et al.* 2009). These have added anthropogenic pressure on the surrounding natural resources. Also, the area surrounding both the lakes is used for agriculture, and in summer when the water level of Berhale recedes, the exposed land is also used for agriculture. A clear demarcation of both the waterbodies should be done in order to conserve the habitat and discourage encroachers.

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Satya Prakash, Arvind Mishra, Anil Kumar Mishra, M.D. Dwivedi, Murari Singh, M. Raziuddin, Mridula Sapru.

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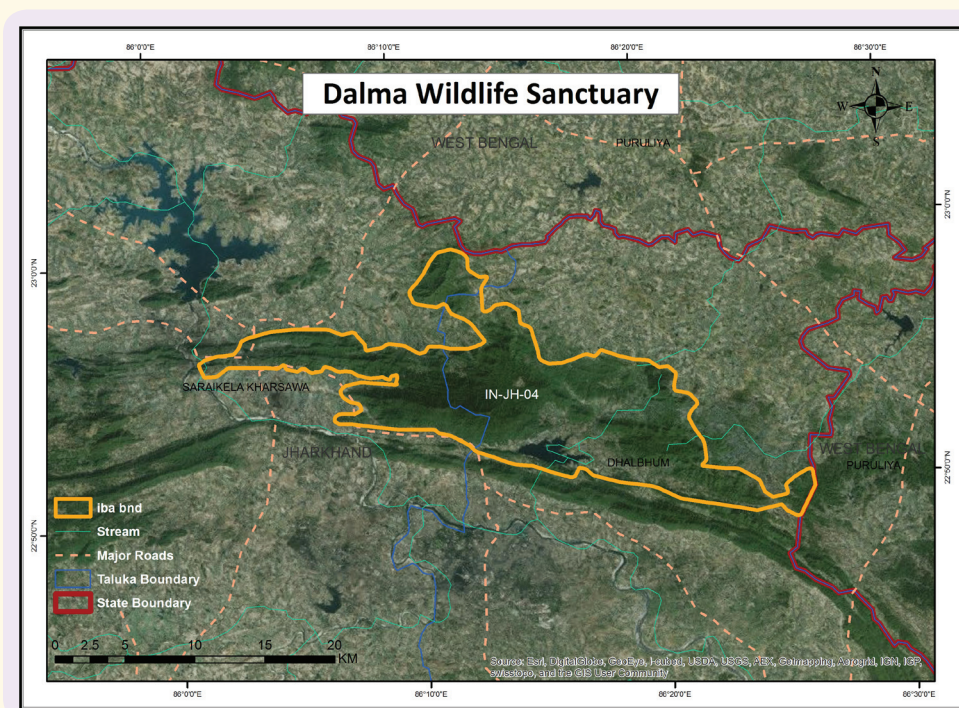
DALMA WILDLIFE SANCTUARY

IN-JH-04

IBA Site Code	: IN-JH-04	Altitude	: 154–926m
State	: Jharkhand	Rainfall	: 1,400 mm
District	: Jamshedpur	Temperature	: 3 °C to 56 °C
Coordinates	: 22° 46' 30", 22° 57' N; 86° 3' 15", 86° 26' 30" E	Biogeographic Zone	: Deccan Peninsula
Ownership	: State	Habitats	: Tropical Dry Deciduous Forest, Dry Peninsular Sal Forest, Dry Mixed Deciduous Forest
Area	: 193.22 sq. km		

IBA CRITERIA : A1 (Threatened species), A3 (Biome 11: Indo-Malayan Tropical Dry Zone)

PROTECTION STATUS : Wildlife Sanctuary, established in July 1976.



GENERAL DESCRIPTION

Dalma Wildlife Sanctuary (DWS) lies in the catchment area of Subarnarekha river and extends to the reserve forests of adjoining Purulia district, West Bengal. This wildlife sanctuary lies on the northern side of National Highway 33 near Jamshedpur. DWS has undulating terrain with high hillocks, plateau, deep valley, and open fields between hillocks, providing diverse habitats for flora and fauna. Dimna, a manmade lake, is located down the Dalma Hills in the vicinity of DWS, and provides an exceptional wetland habitat for birds. Several migratory birds visit this lake every year during winter. Dalma Lake is a famous tourist spot. Dalma Wildlife Sanctuary is a well known protected area of Asian Elephant *Elephas maximus* and Indian Giant Squirrel *Ratufa indica*. Many other

endangered species including several epiphytic orchids can also be seen.

There are 86 villages within DWS, of which only one village, Konkadasa, is in the core area, the rest being located in buffer area. The core area measures 55 sq. km and the remaining 138.22 sq. km. is the buffer zone. The sanctuary is much frequented by elephants during summer due to the availability of several waterbodies and forest canopy adjoining them.

According to Champion & Seth's (1968) revised classification, the forest of the sanctuary conforms to subgroup 5B Northern Tropical Dry Deciduous Forest and more specifically to sub-type Dry Peninsular Sal and type Northern Dry Mixed Deciduous Forest. The vegetation association has been identified as *Shorea-Cleistanthus-*

Croton series (Gadgil & Meher-Homji 1986) due to which it is considered necessary for biodiversity conservation.

AVIFAUNA

Although the avifauna was largely unstudied, previous records show c. 48 species of birds whose presence needs to be confirmed (Deo 2000). Verma (2011) listed 71 species from this sanctuary. Recent surveys conducted in 2014 and other opportunistic surveys during 2010–2013 recorded the presence of 168 bird species, including two globally Threatened species and 27 Biome 11 species (Prakash *et al.*, *in prep.*). Among these, the Endangered Egyptian Vulture *Neophron percnopterus* was sighted in 2010. Near Threatened Black-headed Ibis *Threskiornis melanocephalus* was sighted near Dimna Lake and Alexandrine Parakeet *Psittacula eupatria* in the forest interior.

ENDANGERED	
Egyptian Vulture	<i>Neophron percnopterus</i>
VULNERABLE	
Asian Woollyneck	<i>Ciconia episcopus</i>
NEAR THREATENED	
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
BIOME 11: INDO-MALAYAN TROPICAL DRY ZONE	
Black Ibis	<i>seudibis papillosa</i>
White-eyed Buzzard	<i>Butastur teesa</i>
Jungle Bush-quail	<i>Perdica asiatica</i>
Indian Peafowl	<i>Pavo cristatus</i>
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>
Yellow-footed Green-pigeon	<i>Treron phaenicoptera</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Sirkeer Malkoha	<i>Phaenicophaeus leschenaultii</i>
Mottled Wood-owl	<i>Strix ocellata</i>
Dusky Eagle-owl	<i>Bubo coromandus</i>
Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrocus birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Ashy-crowned Sparrow-lark	<i>Eremopterix grisea</i>
White-browed Fantail	<i>Rhipidura aureola</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Jungle Babbler	<i>Turdoides striata</i>
Tawny-bellied Babbler	<i>Dumetia hyperythra</i>
Ashy Prinia	<i>Prinia socialis</i>
Jungle Prinia	<i>Prinia sylvatica</i>
White-bellied Drongo	<i>Dicrurus caerulescens</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Grey-headed Starling	<i>Sturnia malabarica</i>
Bank Myna	<i>Acridotheres ginginianus</i>

Although it does not have large number of globally Threatened species, this sanctuary has been included as an IBA site because of the presence of a large number of biome-restricted species, as the site is a very good representation of this biome-type.

OTHER KEY FAUNA

Besides Asian Elephant *Elephas maximus* and Indian Giant Squirrel *Ratufa indica*, other mammals of the sanctuary include Barking Deer *Muntiacus muntjak*, Mouse Deer *Tragulus memina* [*Moschiola indica*], Sloth Bear *Melursus ursinus*, Wild Boar *Sus scrofa*, Common Langur *Presbytis entellus*, Rhesus Macaque *Macaca mulatta*, Wild Dog or Dhole *Cuon alpinus*, Mongoose *Herpestes* sp., and Common Palm Civet *Paradoxurus hermaphroditus*.

LAND USE

- Livestock grazing
- Agriculture
- Regular use of sanctuary road by pilgrims

THREATS AND CONSERVATION ISSUES

- Poaching and traditional hunting by tribals, called “Bishu-Shikar” or “Sendra”
- Construction of Subarnarekha dam and canal
- Proposed industries
- Illegal felling of trees
- Livestock grazing
- Forest fires
- Law and order problem (insurgency)
- Man-animal conflict
- Tourism
- Regular uncontrolled use of sanctuary road for pilgrimage to Dalma Top
- Exploitation of climbers for bark and leaves

The sanctuary is under stress from unregulated tourism, causing serious threat to the avifauna. Pilgrims visiting Dalma Top Mandir, tourists visiting Dimna Lake, use of



SATYA PRAKASH

Despite the fact that 86 villages are present within Dalma Wildlife Sanctuary, a small herd of Asian Elephant is still found here



In some part of the Dalma Wildlife Sanctuary, closed canopy forest provides habitat for Indian Giant Squirrel *Ratufa indica*. Nearly 170 species of birds are found in this IBA but more are likely to be present. Detailed surveys are required

high intensity sound, and litter disposal are threats to the sanctuary. Sporadic reports in newspapers indicate that the migratory birds visiting Dimna Lake have declined in the recent past.

A religious tribal hunt, “Bishu Shikar” or “Sendra”, is organized in Dalma WLS every summer (April/May) for a day, and tribals from different parts of Jharkhand, West Bengal, and Odisha swarm to the sanctuary for hunting. This actually starts on Sarhul festival (during first to third week of February every year), after which the tribals hunt animals usually every Monday until the main “Bishu Shikar”.

Sand mining along the riverbeds imposes immense pressure on the birds, decimating their breeding sites. Cattle grazing and illegal firewood collection by local people and repeated fires also create adverse conditions for birds. Besides this, the area suffers law and order problems due to insurgency and armed extremists, which discourages wildlife studies and ecotourism.

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NORTH KARANPURA VALLEY

IBA Site Code : IN-JH-05

State : Jharkhand

District : Hazaribagh

Coordinates : 23°38'40" to 23°58'40" N, 84°46'20" to 85°24'15" E

Ownership : State

Area : 1,230 sq. km

Altitude : 397 m to 751 m

Rainfall : 1295.8 mm

Temperature : 4 °C to 42 °C

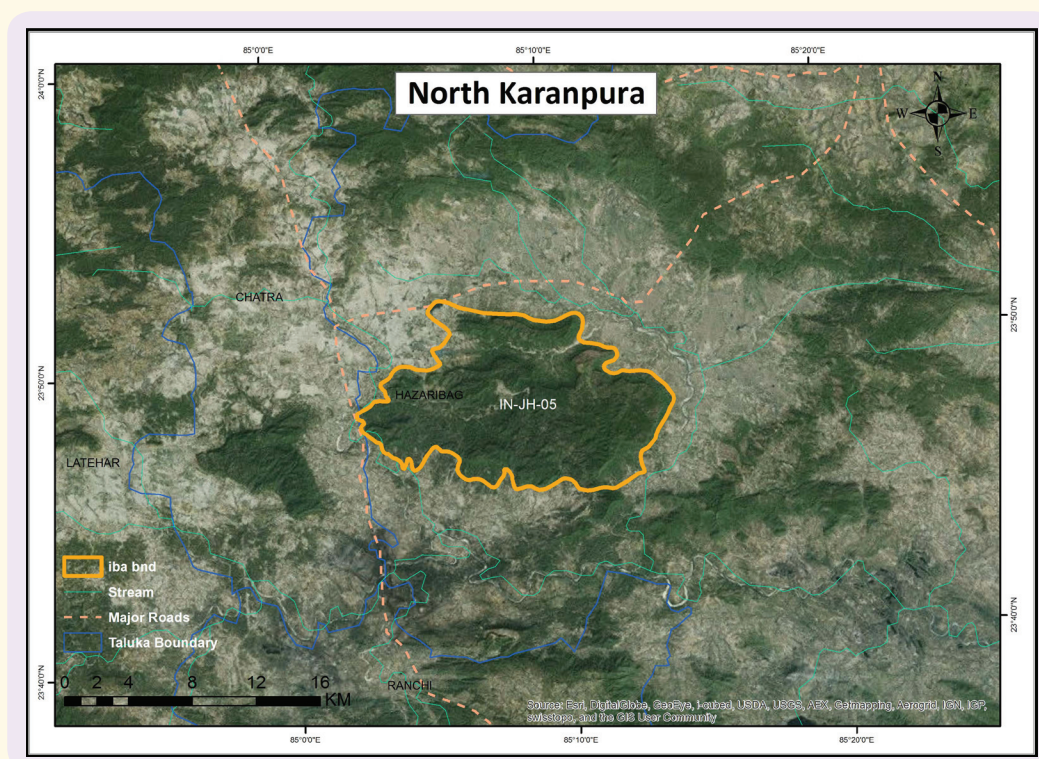
Biogeographic Zone : Deccan Peninsula

Habitats : Tropical Dry Deciduous Forest, Dry Peninsular Sal Forest and Dry Mixed Deciduous Forest

IN-JH-05

IBA CRITERIA : A1 (Threatened species), A3 Biome 11: Indo-Malayan Tropical Dry Zone

PROTECTION STATUS : Protected Forest.



GENERAL DESCRIPTION

The North Karanpura Valley, covering an area of 1,230 sq. km. lies in the upper Damodar Watershed in Hazaribagh, Latehar, Ranchi, and Chatra districts of Jharkhand. Karanpura Valley is richly forested and has agricultural landscape with hundreds of ancestral villages. North Karanpura is known for its coal blocks. The valley is also a rich cultural heritage site. Significant rock art sites are located in the hills surrounding the valley. Besides these, there are sacred burial grounds of a former tribal civilization, marked by megaliths.

The vast coal reserves (14 billion tonnes, 9% of India's coal reserves), make them amongst the biggest in India (Srivastava *et al.* 2013). Various mining companies have

their economic interests in this area and hence they want the diversion of forest land to mining. Unfortunately, the coal blocks are mostly available under forest cover, and any such diversion will lead to the destruction of forest and wildlife in the area.

The North Karanpura coalfields embrace the core Karanpura Valley but also extend well beyond it. They are elliptical in shape having axes of 64 km in east-west direction and 32 km in north-south direction, dominated by a number of distinctive hills. The Karanpura valley is the core of the proposed North Karanpura Coalfields. In the centre, near Barkagaon, stands the predominant escarpment of Mahaudi Hill (728 m, with its upper 244 m sheer sandstone scarp). The western end of the valley is south of Tandwa, where

stands a large triangular hill mass called Satpahar (634 m). The southern hill range of Aswa Pahar (751 m) separates the valley from the Damodar basin.

The forest in the area is classified as Northern Tropical Dry Deciduous Forest (Champion & Seth 1968), which has been further classified as Northern Dry Peninsular Sal Forest and Northern Dry Mixed Deciduous Forest. The surrounding hills are covered with age old Sal *Shorea robusta* trees, interspersed with the agriculture lands. Thousands of Mahua trees *Bassia latifolia* form an integral part of the village economy and culture. Very good coppice forest of high wildlife value is reported by the forest department.

The valley is an important corridor to many wild animals. Its forested hills have always served as natural corridors for wild animals, connecting the jungles of Palamau in the west to those of Ranchi in the south and the Konar watershed in the east. These corridors are being cut by the mines and by the railway lines which are being built in the valley.

AVIFAUNA

The valley is rich in avifauna but records are scanty. Based on the biome classification of BirdLife International, it lies in the Indo-Malayan Tropical Dry Zone (Biome 11). Previous record of Integrated Management Plan prepared by Hazaribagh West Division of the forest department shows the presence of only 53 species of birds (Singh *undated*). The draft report of Integrated Management Plan lists 71 species of birds (Srivastava *et al.* 2013). A preliminary checklist of avifauna of the valley based on surveys conducted during the past three years (2011–2013) have shown the presence of 139 species of birds, including three Globally Threatened and 25 biome restricted species (Prakash *et al. in prep.*).

The Critically Endangered White-rumped Vulture *Gyps bengalensis* is found nesting in the region, especially in Barkagaon district, Hazaribagh (Prakash 2009, Prakash *et al.* 2013). Endangered Egyptian Vulture *Neophron percnopterus* is also reported from the region. Mahudi Hill is probably the only place in Jharkhand where nesting sites for Long-billed Vulture *Gyps indicus* have been reported. Several nests of this vulture have been sighted in Mahudi Hill (Prakash *et al. in prep.*). The presence of vultures, especially the Critically Endangered Indian Vulture in the region makes North Karanpura Valley one of the important places in Jharkhand state. More scientific studies are required to explore the status of avifauna in the region.

OTHER KEY FAUNA

Major fauna includes Leopard *Panthera pardus*, Spotted Deer *Axis axis*, Barking Deer *Muntiacus muntjak*, Sambar *Cervus unicolor*, Sloth Bear *Melursus ursinus*, Striped Hyaena *Hyaena hyaena*, Indian Wild Boar *Sus scrofa*, Common Palm Civet *Paradoxurus hermaphroditus*, and Golden Jackal *Canis aureus*.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
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NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

BIOME 11: INDO-MALAYAN TROPICAL DRY ZONE

Red-naped Ibis	<i>Pseudibis papillosa</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>
Painted Francolin	<i>Francolinus pictus</i>
Rain Quail	<i>Coturnix coromandelica</i>
Jungle Bush-quail	<i>Perdica asiatica</i>
Indian Peafowl	<i>Pavo cristatus</i>
Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>
Yellow-footed Green-pigeon	<i>Treron phoenicopterus</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrocus birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
White-browed Fantail	<i>Rhipidura aureola</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Jungle Babbler	<i>Turdoides striata</i>
Large Grey Babbler	<i>Turdoides malcolmi</i>
Ashy Prinia	<i>Prinia socialis</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Chestnut-tailed Starling	<i>Sturnia malabarica</i>
Bank Myna	<i>Acridotheres ginginianus</i>
White-bellied Drongo	<i>Dicrurus caeruleus</i>

LAND USE

- Coal mining
- Water management
- Watershed management

THREATS AND CONSERVATION ISSUES

- Extraction industry (Coal mining)
- Livestock/Grazing
- Dam
- Lack of administration
- Poaching
- Agricultural intensification and expansion
- Forest fires
- Expansion of village

One of the important areas in Hazaribagh likely to be affected by large-scale opening of coal mining is the North Karanpura Valley. The vital forests of North Karanpura Valley are threatened by existing and proposed mining by Coal India Ltd. The overall environmental and social impacts of coal mining on Hazaribagh in general, and on wildlife corridors in particular, have been highlighted for



SATYA PRAKASH

North Karanpura Valley is richly forested and has agricultural landscape. It is also known for coal blocks due to which the valley is under tremendous pressure of mining. It has three globally Threatened vulture species and many Near Threatened and biome species

many years by local groups. Mining will certainly disturb the habitat of Critically Endangered vultures which are breeding and roosting in the area.

A proposed thermal power station and dam also threaten the area. Due to constant lobbying by locals in the Hazaribagh region, the World Bank commissioned a study on the adverse impacts of open cast mining on wildlife habitats and corridors (Vagholikar *in press*). Parts of the area have already been mined extensively, destroying vital wildlife corridors. Along with grazing, lopping, felling of young trees and removal of bark for rope making is also rampant. To protect North Karanpura Valley, the hills and the corridors connecting adjoining forests need to be conserved.

KEY CONTRIBUTOR

Satya Prakash, A.K. Mishra, Murari Singh, M. Raziuddin.

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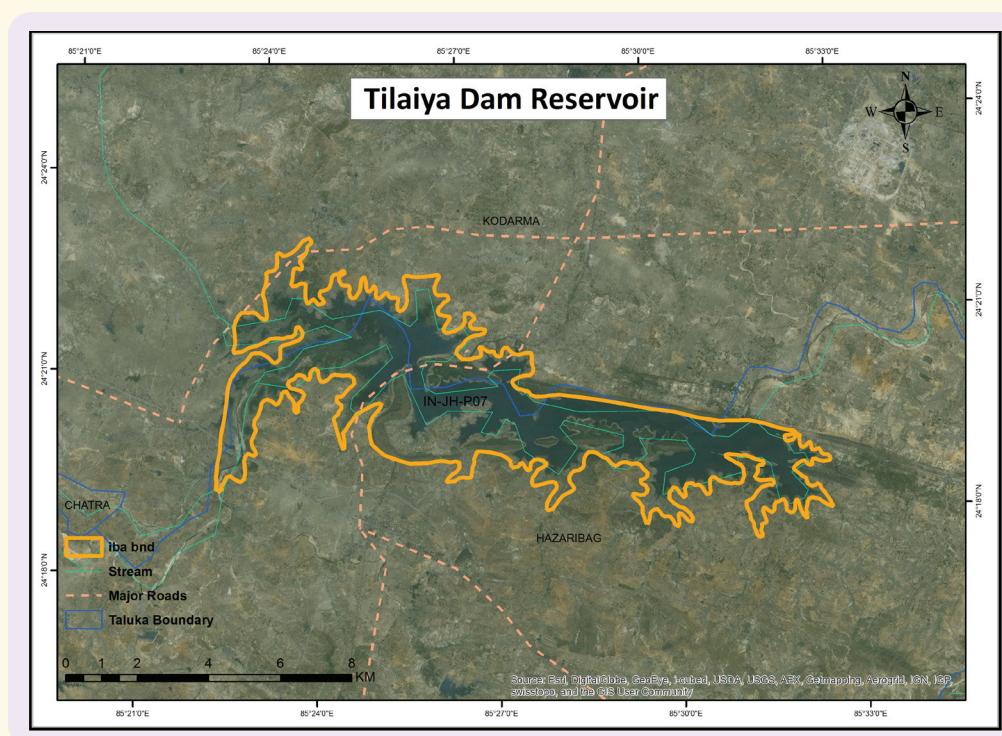
TILAIYA DAM

IN-JH-06

IBA Site Code	: IN-JH-06	Altitude	: 363 m
State	: Jharkhand	Rainfall	: 127 cm
District	: Koderma	Temperature	: 8°C to 41°C
Coordinates	: 24° 19' 26" N, 85° 31' 16 " E	Biogeographic Zone	: Deccan
Ownership	: Damodar Valley Corporation	Habitats	: Dam (Permanent Fresh Water)
Area	: 5,921 ha		

IBA CRITERIA : A1 (Threatened species), A3 (Biome 11: Indo-Malayan Tropical Dry Zone).

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Tilaiya Dam has been identified as a wetland of special conservation importance by MoEF in Jharkhand (Islam & Rahmani 2008). Tilaiya Dam was the first of the four multi-purpose dams included in the first phase of the Damodar Valley Corporation. It was constructed across the Barakar river, at Tilaiya in Koderma district in Jharkhand. The dam wall is 366 m long and 30 m high, situated in idyllic surroundings with a beautiful reservoir in a 36 sq. km area. It has a power generation capacity of 4,000 KW. The water from Tilaiya Dam is also used for irrigation purposes during the dry season. The famous Sainik School is located in the vicinity of the dam.

The Barakar river rising from the hilly forests of Hazaribagh district has a catchment area of 984 sq. km, comprising mainly forests, pastures, cultivated

land, and wasteland. The main Patna-Ranchi road from Barhi (on Grand Trunk Road) passes through the hills, and creates a picturesque view of the reservoir. A number of migratory birds can be seen during the winter season while travelling on this road. Ever since its construction, the dam has become an important habitat for both migratory and resident birds. An island present within the dam provides an excellent roosting and breeding ground for birds.

AVIFAUNA

The avifauna is mostly unstudied, yet about 115 bird species have been recorded (Prakash *et al. in prep.*), including five globally Threatened and Near Threatened species and 16 Biome-restricted species. Critically Endangered White-rumped Vulture *Gyps bengalensis* and Long-billed Vulture *Gyps indicus* have been reported

from the periphery of Tilaiya Dam. Black-headed Ibis *Threskiornis melanocephalus*, Ferruginous Duck *Aythya nyroca*, and Alexandrine Parakeet *Psittacula eupatria* are the Near Threatened species present here. The site qualifies as an IBA on the basis of the presence of globally threatened species and biome-restricted species. More scientific studies are required to find out the density and abundance of various species of birds. A large number of migratory birds such as the Bar-headed Goose *Anser anser*, Red-crested Pochard *Netta rufina*, Eurasian Coot *Fulica atra*, Tufted Duck *Aythya fuligula*, Northern Shoveller *Anas clypeata*, and Northern Pintail *Anas acuta* visit the lake during the winter.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>

NEAR THREATENED

Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Ferruginous Duck	<i>Aythya nyroca</i>

BIOME 11: INDO-MALAYAN TROPICAL DRY ZONE

Red-naped Ibis	<i>Pseudibis papillosa</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>
Indian Peafowl	<i>Pavo cristatus</i>
Yellow-footed Green-pigeon	<i>Treron phoenicoptera</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Indian Grey Hornbill	<i>Ocyrceros birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Jungle Babbler	<i>Turdoides striata</i>
Ashy Prinia	<i>Prinia socialis</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Grey-headed Starling	<i>Sturnia malabarica</i>
Bank Myna	<i>Acridotheres ginginianus</i>

OTHER KEY FAUNA

There are no large mammals found around the lake, but Job *et al.* (1952) recorded 40 species of fishes belonging to seven families in the river stretch before the construction of the dam.

LAND USE

- Flood control
- Power generation
- Irrigation
- Navigation
- Water management
- Fisheries
- Livestock grazing

THREATS AND CONSERVATION ISSUES

- Poaching of birds
- Illegal felling of trees
- Livestock grazing
- Tourism
- Siltation

Large numbers of tourists visit the islands in motor boats and chase the waterbirds for photography. Tourists also visit the site for picnics and recreational activities on the islands. They litter the islands with garbage which includes plastic and glass bottles.

Encroachment on the flat land and exposed land on the island for cultivation is also a threat. This may take away the breeding ground of the ground-nesting birds like the Little Ringed Plover *Charadrius dubius*. Siltation of the reservoir due to soil erosion in parts of Chhota Nagpur Plateau has also threatened the reservoir.

Among the fishes reported by Job *et al.* (1952), species like *Labeo dero*, *Puntius chola*, *P. conchoniensis*, *Crossocheilus latitus*, *Garra mullya*, *G. gotyla*, *Macrognathus aculiatatus*, *Oxygaster clupeoides*, and *Aspidoparia morar* have disappeared after the construction of the dam. The new species appearing after the reservoir formation include *Notopterus notopterus*, *N. chitala*, *Wallago attu*, *Ompok bimaculatus*, *Rhinomugil corsula*, *Ambassis nama*, *A. ranga*, *Eutropichthys vacha*, *Labeo bata*, *Ailia coila*, *Mastacembelus armatus*, and *M. pancalus* (Sugunan 1995). The reservoir needs conservation attention and more scientific work to document avifauna and other species of the area.

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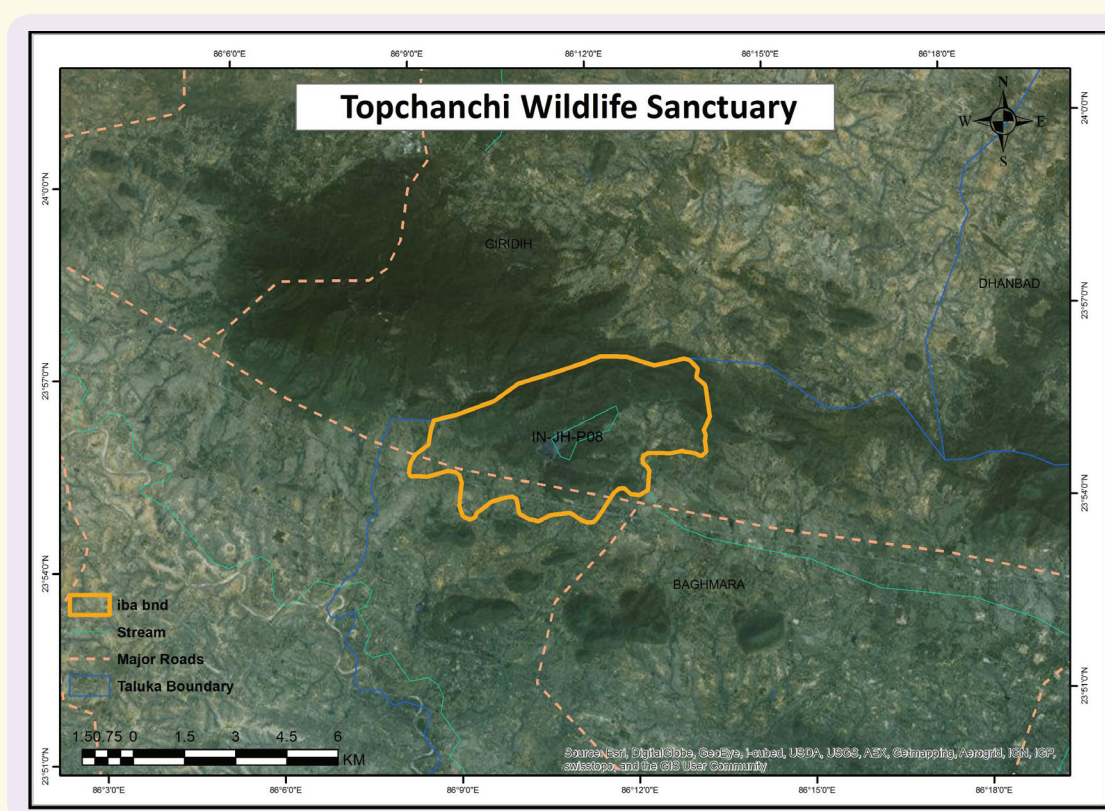
TOPCHANCHI WILDLIFE SANCTUARY

IN-JH-07

IBA Site Code	: IN-JH-07	Altitude	: 960 feet PL GIVE METRIC
State	: Jharkhand	Rainfall	: 1,397 mm
District	: Dhanbad	Temperature	: 7° C to 45 °C
Coordinates	: 23°50' to 23°56' N, 86°06' to 86°15' E	Biogeographic Zone	: Deccan Peninsula
Ownership	: State	Habitats	: Tropical Dry-Deciduous Forest, Dry Peninsular Sal Forest, Dry Bamboo Brakes,
Area	: 12.81 sq. km		

IBA CRITERIA : A1 (Threatened species), A3 (Biome 11: Indo-Malayan Tropical Dry Zone)

PROTECTION STATUS : Wildlife Sanctuary, notified on June 3, 1978.



GENERAL DESCRIPTION

The Topchanchi Wildlife Sanctuary is blessed with beauty, colour, sprawling grasslands, and bamboo plantations. The sanctuary is of great aesthetic value and has much scope for wildlife research and education. It has tremendous potential to support ecotourism. Topchanchi Wildlife Sanctuary extends 6.25 km from east to west and 3.75 km from north to south .

Topchanchi Wildlife Sanctuary is also famous for Rajdaha reservoir, also called Topchanchi Jheel (lake). Rajdaha reservoir or Topchanchi Jheel is a small waterbody in the heart of the sanctuary. The lake is surrounded by fairly dense forest. During monsoon, water gets collected in the

jheel from the forest catchment areas mainly through two major nullahs, one Lalki Pahari Nullah from Ganeshpur from the north-east direction and the other Dholkatta Nullah from the north-west direction. Topchanchi Jheel also serves as a lifeline for Dhanband, Jharia, and Katras townships, providing drinking water. It is about 1.25 km from National Highway 2 (NH2, Grand Trunk Road) and a road approximately 5 km encircles the lake.

The Topchanchi Jheel provides rich habitats for many resident and migratory birds which flock here in winter. Although Topchanchi Jheel is centrally located within the Topchanchi Wildlife Sanctuary, it is not a part of the sanctuary. The jheel is under the control of Mineral Area

Development Authority (MADA) and Irrigation Department (Dhanbad). In the last few years, Asian Elephant *Elephas maximus* have been seen regularly crossing the sanctuary through the lake.

The sanctuary area falls under the broad type of northern tropical dry deciduous forest which has been sub-classified as Dry Peninsular Sal forest, Northern Dry Mixed Deciduous forest, and Dry Bamboo Brake. Dry Peninsular Sal forest is found in Ganeshpur and Bhawardaha areas of Jharkhand. The forest consists of almost pure Sal *Shorea robusta* with Asan *Terminalia tomentosa*, Bija Sal *Pterocarpus marsupium*, Dhow *Anogeissus latifolia*, among others. Northern Dry Mixed Deciduous forest is found in almost the entire area. The scheduled tribes inhabiting these forests include Mundas, Santhalis, Kherwars, and Birhors.

AVIFAUNA

Prakash *et al.* (2010) reported 92 species of birds in the area. A recent survey and updated checklist by Prakash *et al.* (*in prep.*) shows the presence of 141 species of birds, including one Vulnerable three Near Threatened and 17 biome-restricted assemblage species. Near Threatened species observed were Black-headed Ibis *Threskiornis melanocephalus*, Alexandrine Parakeet *Psittacula eupatria*, and Black-necked Stork *Ephippiorhynchus asiaticus*. Black-necked Stork was seen by IBCN State Coordinator Arvind Mishra (*pers. comm.*) two decades ago.

The sanctuary and the jheel provide good habitat for Biome 11: Indo-Malayan Tropical Dry Zone species. We have included this site mainly on the basis of biome-restricted

VULNERABLE	
Asian Woollyneck	<i>Ciconia episcopus</i>
NEAR THREATENED	
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
BIOME-11: INDO-MALAYAN TROPICAL DRY ZONE	
Red-naped Ibis	<i>Pseudibis papillosa</i>
Indian Peafowl	<i>Pavo cristatus</i>
Yellow-footed Green-pigeon	<i>Treron phoenicoptera</i>
Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrceros birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Black-headed Cuckooshrike	<i>Coracina melanoptera</i>
Small Minivet	<i>Pericrocotus cinnamomeus</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Jungle Babbler	<i>Turdoides striata</i>
Ashy Prinia	<i>Prinia socialis</i>
White-bellied Drongo	<i>Dicrurus caeruleus</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
Grey-headed Starling	<i>Sturnia malabarica</i>
Bank Myna	<i>Acridotheres ginginianus</i>

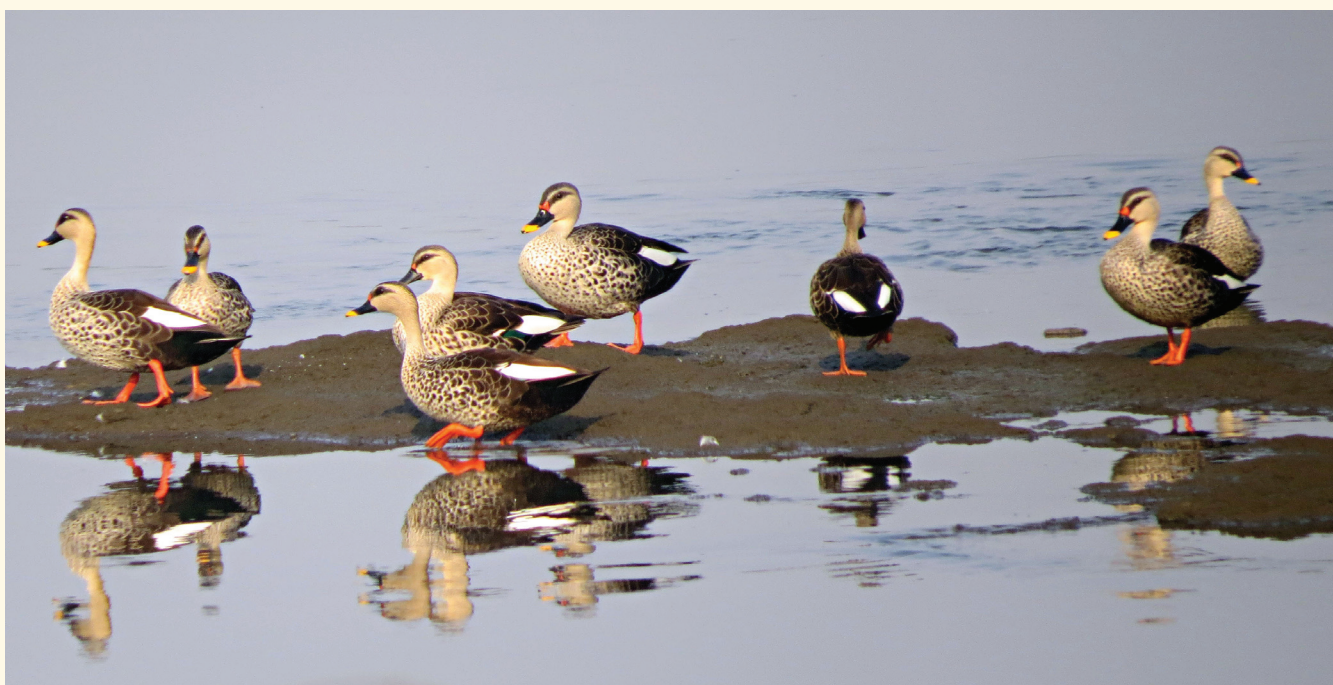
assemblage criteria. More studies are required to find out the density and abundance of various species of birds.

OTHER KEY FAUNA

Mammals commonly sighted in the IBA are Chital *Axis axis*, Wild Boar *Sus scrofa*, Palm Civet *Paradoxurus*



Rajdaha reservoir also called Topchanchi Jheel is located in the centre of the sanctuary and surrounded by fairly dense forest. This provides good habitat for large number of waterfowl and forest species



Among the resident birds, Indian Spot-billed Duck *Anas poecilorhyncha* commonly breeds in Topchanchi Jheel

hermaphroditus, Barking Deer *Muntiacus muntjak*, Mongoose *Herpestes edwardsi*, Striped Hyaena *Hyaena hyaena*, Common Langur *Semnopithecus entellus*, Golden Jackal *Canis aureus*, Indian Porcupine *Hystrix indica*, and Indian Pangolin *Manis crassicaudata*.

LAND USE

- Livestock grazing
- Agriculture by local villagers
- Dam for drinking water supply

THREATS AND CONSERVATION ISSUES

- Anthropogenic activity (collection of molluscs)
- Poaching and hunting
- Fishing
- Illegal felling of trees
- Livestock grazing
- Forest fires
- Law and order problem (insurgency)
- Invasive species (weeds)
- Man-animal conflict
- Tourism
- Soil erosion

Topchanchi Jheel is an important waterbody which provides water to wild animals including birds. Hundreds of villagers in small groups come from the remote villages by the end of February till the rainy season to collect molluscs. This collection disturbs the ecosystem in a variety of ways, including lack of food for bird species and repeated trampling on the soil substratum. The marshy areas are adversely affected by such activities as waterbirds extensively use the

sandflats, mudflats, and swamps for feeding, resting, and breeding. The problem of soil erosion in the catchment areas from the Dholkatta and Lalki Nullah parts of the sanctuary is acute. Thus, large parts of this jheel are silted up and are being subjected to spread of terrestrial weeds like *Ipomoea* and *Lantana camara*.

Topchanchi Jheel is leased for fishing by MADA. Fishing continues throughout the year, detracting the birds that come to the sanctuary for nesting, roosting, and breeding. The people residing in surrounding villages are completely dependent on these forests for fuel wood. The felling of trees can be seen regularly around the lake which is a threat to bird habitats. Poaching of birds is not very common, but waterbirds are poached, especially during the winter.

Topchanchi Jheel is an important site for tourism. Tourists come here for picnics and recreational activities. As Topchanchi Wildlife Sanctaury and Topchanchi Jheel are rich in floral and faunal diversity, protection and proper management of the jheel can make it a Bird Paradise.

KEY CONTRIBUTORS

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